

SAP Business Intelligence Reporting

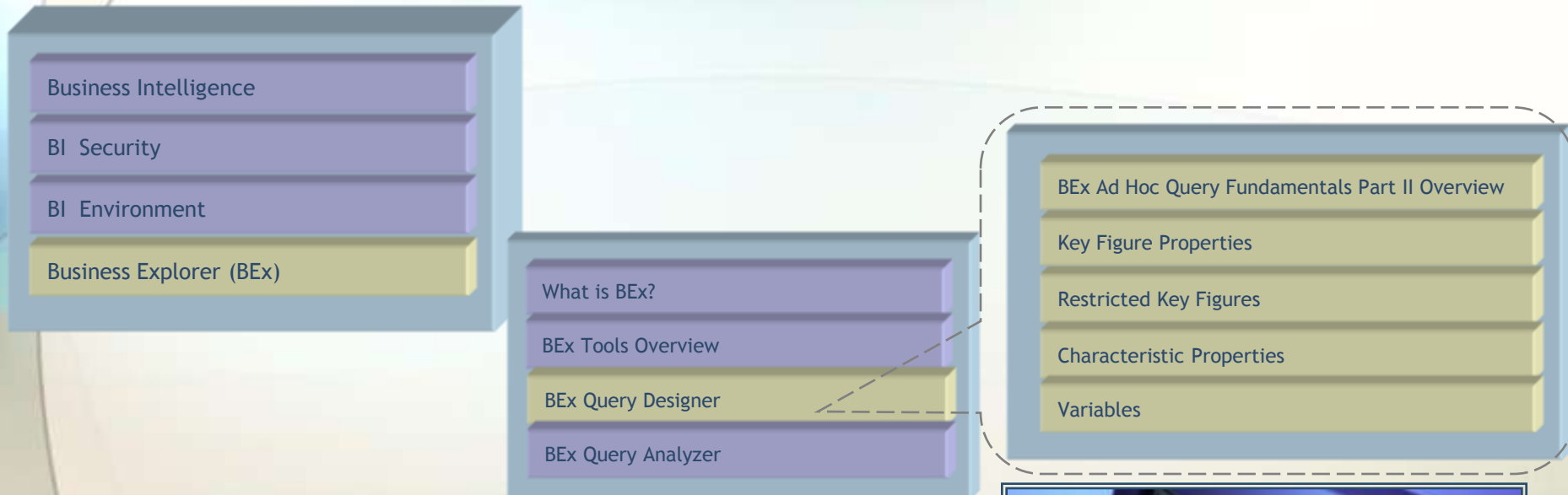
BEx Ad Hoc Query Fundamentals - Part II

Washington State HRMS Business Intelligence (BI)
BI Power User Workshop Materials

General Topics - BI Power Users

BEx Ad Hoc Query Fundamentals - Part II

The following BEx Ad Hoc Query Fundamentals - Part II section provides an overview of BEx Ad Hoc Query Fundamentals and builds on the key terms and concepts covered in BEx Query Fundamentals - Part I.



BEx Ad Hoc Query Fundamentals - Part II Overview

BEx Ad Hoc Query Fundamentals - Part II contains the following key terms and concepts:

- Key Figure Properties
- Restricted Key Figures
- Characteristic Properties
- Variables

The screenshot displays the BEx Query Designer window titled "BEx Query Designer - Query: New Query". The interface is divided into several panes:

- InfoProvider:** Shows a tree structure under "Headcount and Personnel" with "Key Figures" and "Dimensions".
- Filter:** Contains "Characteristic Restrictions" and "Default Values". A callout box labeled "Variable" points to the "Military Status [DMIL_STATUS]" field.
- Rows/Columns:** Contains "Free Characteristics" and "Columns". A callout box labeled "Restricted Key Figure" points to the "Number of Female Employees" field in the "Columns" pane.
- Area for Filter Values:** A label pointing to the "Filter" pane.
- Area for Dimensions:** A label pointing to the "Rows" pane.
- Area for Key Figure:** A label pointing to the "Columns" pane.
- Area for Dimensions:** A label pointing to the "Rows" pane.
- Properties:** A pane on the right showing the "Number of Female Employees (Selection)" with tabs for "General", "Aggregation", "Display", and "Advanced". The "Description" tab is active, showing "Number of Female Employees" and an "Edit..." button.
- Preview:** A table at the bottom showing a grid of data for "a-Calendar", "a-Gender", "a-Military S", "b-Military S", "b-Gender", "a-Military S", "b-Military S", "b-Calendar", "a-Gender", "a-Military S", and "b-Military S".
- 0 Messages:** A pane at the bottom left showing no messages.

BEx Ad Hoc Query Fundamentals - Part II Overview

BEx Ad Hoc Query Fundamentals - Part II contains the following key terms and concepts:

- Key Figure Properties
- **Key Figure Properties** are settings that format the key figure values when they are displayed in the ad hoc query results.

The collage displays six screenshots of the 'Properties' dialog box for a BEx Ad Hoc Query, showing different tabs and their settings:

- General Tab:** Shows the 'Description' field with 'Total All Employees' and the 'Technical Name' field. It also includes a 'Use Standard Text' checkbox and an 'Edit...' button.
- Aggregation Tab:** Shows the 'Aggregation' section with 'Exception Aggregation' selected, 'Use Standard Aggregation' checkbox, and a 'Ref. Characteristic' field.
- Display Tab:** Shows the 'Highlight' section with 'Always Show' selected, 'Normal Display' dropdown, and 'Number of Decimal Places' set to 0. It also includes a 'Scaling Factor' dropdown and a 'Sign Change' section.
- Advanced Tab:** Shows the 'Currency Translation' section with 'Conversion Type' set to 'General Business Default Value' and 'Target Currency' set to 'USD'. It also includes a 'Unit Conversion' section.
- Conversions Tab:** Shows the 'Change Date' section with 'Data cannot be changed' selected. It also includes a 'Planning on Totals' section.
- Planning Tab:** Shows the 'Local Calculations' section with 'Calculate Results As' set to '(Nothing Defined)' and 'Calculate Single Values As' set to '(Nothing Defined)'. It also includes a 'Calculation Direction' dropdown and a 'Use Precalculated Value' checkbox.

BEx Ad Hoc Query Fundamentals - Part II Overview

BEx Ad Hoc Query Fundamentals - Part II contains the following key terms and concepts:

- **Characteristic Properties**
- **Characteristic Properties** format the Characteristics when they are displayed in the ad hoc query results.

The image displays four overlapping screenshots of the SAP BEx Ad Hoc Query 'Properties' dialog box, illustrating different configuration tabs for the 'Personnel Area (Drilldown Characteristic)'. Each window has a title bar 'Properties' and a subtitle 'Personnel Area (Drilldown Characteristic)'. The tabs are 'General', 'Display', 'Hierarchy', 'Planning', and 'Advanced'.

- Top-Left Window (Description Tab):** Shows the 'Description' section with 'Personnel Area' and a checked 'Use Standard Text' option. The 'Technical Name' is 'OPERS_AREA'.
- Top-Right Window (Value Display Tab):** Shows the 'Value Display' section. 'Display as' is set to 'Text' with a 'Standard' text view. The 'Use Characteristic Setting' checkbox is checked. The 'Sorting' section shows 'Sort by' as 'As in the Query' and 'Sort Direction' as 'As in the Query'. The 'Results Rows' section has 'Always Display' checked and 'Use Characteristic Setting' checked.
- Bottom-Left Window (Planning Tab):** Shows the 'Planning on Hierarchy Nodes' section. Options include 'No Budgeting', 'Bottom-Up Budgeting (Roll Up Value)', 'Top-Down Budgeting (Posting to Higher-Level Nodes)', and 'Top-Down Budgeting (Posting to Root Node)'.
- Bottom-Right Window (Hierarchy Tab):** Shows the 'Hierarchy' section. It includes 'Hierarchy Parameters' for 'Display Level' and 'Position of Lower Level Nodes'. The 'Values of System Nodes' section has 'Always Show' checked for 'Hubs'. The 'Values with Only One User Exit Node' section also has 'Always Show' checked for 'Hubs'. The 'Sorting' section shows 'Sort by' as 'As in the Query' and 'Sort Direction' as 'Ascending'.

Restricted Key Figures are Key Figures that are filtered by one or more Characteristics. For example, the Number of Employees Key Figure can be restricted by the Gender Characteristic to include Female employees only.

Restricted Key Figures are different than Filters:

- **Restricted Key Figures restrict for the Key Figure value only**
In the sample below, the “Number of Female Employees” Restricted Key Figure will display the number of female employees by Personnel Area and Gender.
- **Filters restrict for the entire query**
In the sample below, the “Calendar Year/Month” Filter will display the number of Employees and Number of Female Employees by Personnel Area and Gender as of the date input by the user. If the user selects 7/2005 as the Calendar Year/Month value, the query results will be filtered to 7/2005.

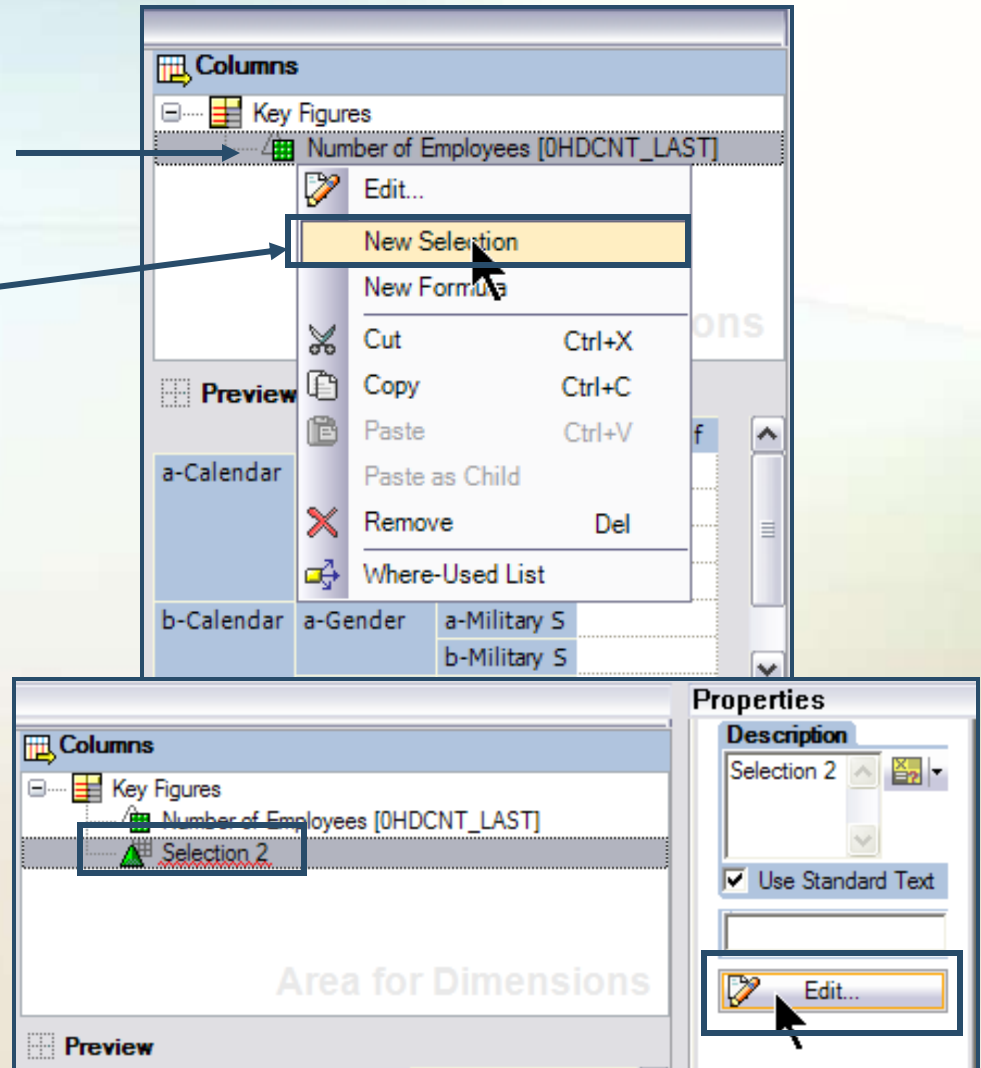
The screenshot shows the BEx Query Designer interface with the following components:

- InfoProvider:** A tree view on the left showing the hierarchy: Key Figures > Dimensions > Employee > Personnel Area > Personnel Data > Cost Center > Organizational Assignment > Employment > Payment > Employment Dates > Employment Service > Data Package > Time > Unit.
- Filter:** A section titled 'Characteristic Restrictions' containing 'Calendar Year/Month' and 'Calendar Month Prompt _ Single Value'. A callout box points to this section with the text 'Calendar Year/Month Filter'.
- Default Volume:** A section containing 'Personnel Area' and 'Gender'.
- Rows/Columns:** A section titled 'Free Characteristics' containing 'Ethnic Origin'.
- Columns:** A section titled 'Key Figures' containing 'Number of Employees' and 'Number of Female Employees'. A callout box points to this section with the text 'Number of Female Employees Restricted Key Figure'.
- Rows:** A section containing 'Personnel Area' and 'Gender'.
- Preview:** A table at the bottom right showing the query results. It has columns 'a-Personnel Area', 'a-Gender', 'b-Personnel Area', 'b-Gender', 'Number of:', and 'Number of:'. The table contains data for 'a-Personnel Area' and 'a-Gender'.

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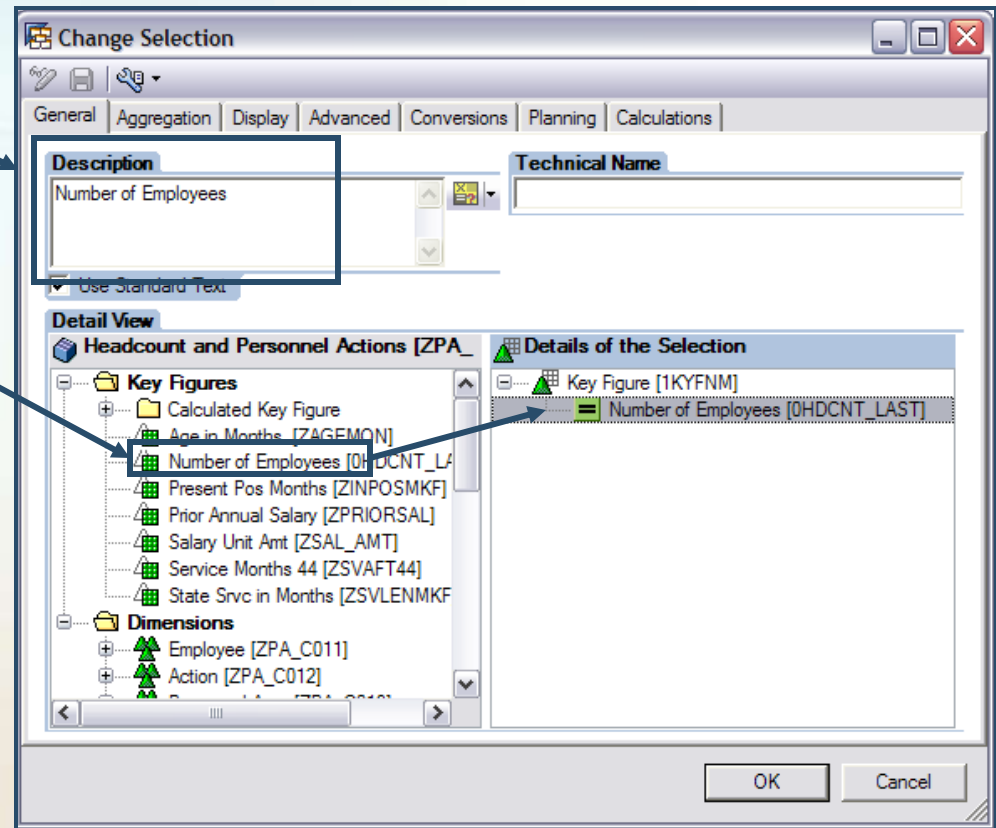
The example below shows how to create a Restricted Key Figure that will display the number of female employees only:

1. Drag&Drop the Number of Employees Key Figure to the Columns section of the query.
2. Right mouse-click the Number of Employees Key Figures in the Columns section and select New Selection.
3. Highlight the "Selection" that has been added under the Key Figures heading. In the Properties section, click "Edit"



Result: The New Selection screen will open to assign the restricted key figure.

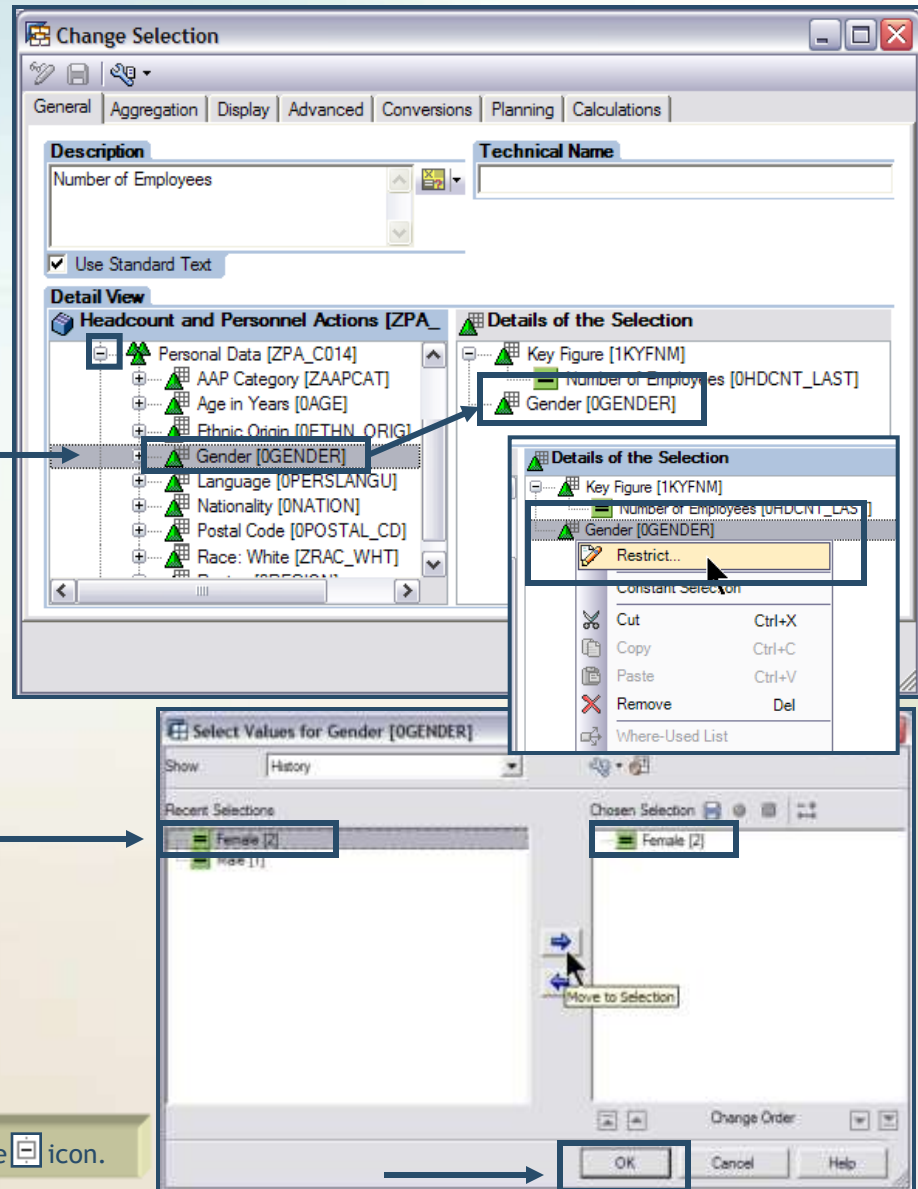
3. Enter the name of the Restricted Key Figure (Number of Female Employees) in the Description text box of the New Selection screen.
4. Drag&Drop the Number of Employees Key Figure from the Key Figures folder to the Description section of the query.



5. *Expand the Personal Data Dimension.
6. Drag&Drop the Gender characteristic to the Description column.
7. Right mouse-click the Gender Characteristic and select Restrict from the Context Menu.

Result: The Selection for Gender screen will display.

8. Drag&Drop "Female" from the Description column to the Selection column of the Selection for Gender screen.
9. Click OK.



Continued...

 *To Expand an item, click the  icon. To Collapse an item, click the  icon.

Restricted Key Figures, cont...

Result: The “Female” value of the Gender Characteristic has been added to the Key Figure restriction. This will restrict the number of employees for the Number of Female Employees Key Figure to female employees only.

- Click OK to exit the New Selection screen.

The screenshot shows the SAP BEx Query Designer interface. The 'Change Selection' dialog is open, showing the 'Number of Employees' key figure. The 'Details of the Selection' pane shows the 'Gender' characteristic with the 'Female' value selected. The 'OK' button is highlighted. Below the dialog, the 'New Selection' screen is visible, showing the 'Number of Female Employees' key figure in the 'Columns' pane. The 'Rows' pane shows the 'Gender' characteristic with the 'Female' value selected. The 'Preview' pane shows a table with columns for 'a-Calendar', 'a-Gender', 'a-Military S', 'b-Military S', 'b-Gender', 'b-Military S', 'b-Calendar', and 'b-Military S'.

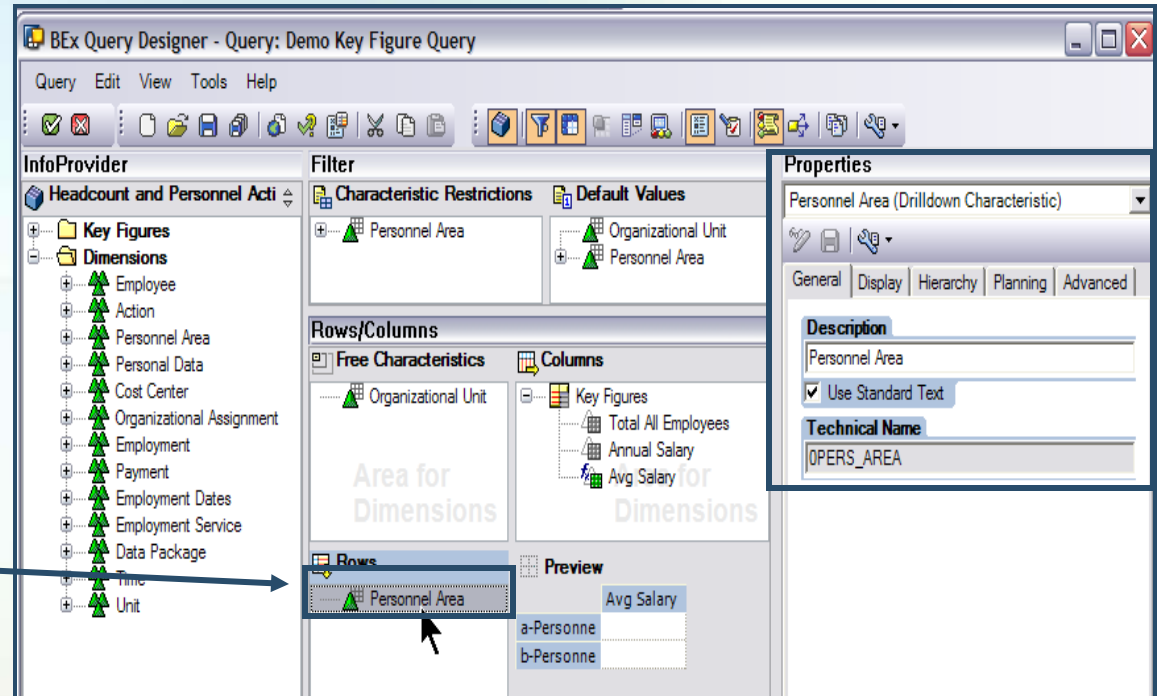
Result: A Restricted Key Figure has been created that restricts the number of employees to females employees only.

Characteristic Properties format the Characteristics when they are displayed in the ad hoc query results.

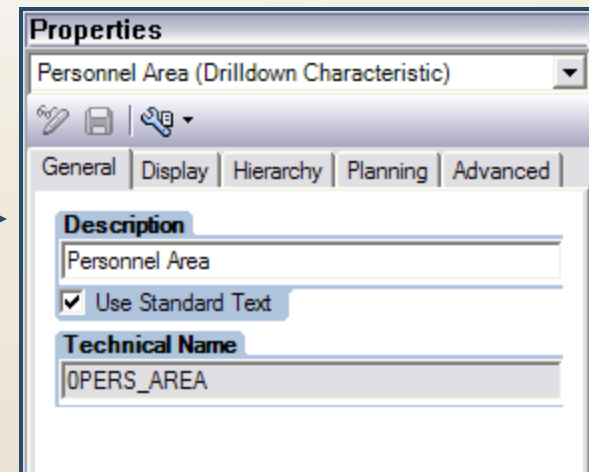
The example uses the Headcount and Personnel Actions InfoProvider to show how to access the Properties of the Personnel Area Characteristic in the query.

To access the Characteristic properties:

1. If necessary, Drag&Drop the Personnel Area Characteristic to the Rows section of the query.
2. Select the Personnel Area Characteristic.



Result: The Properties for the Personnel Area are displayed in the Properties pane.



Characteristic Properties, Cont...

The example below provides a brief description of Characteristic Properties:

Properties
Personnel Area (Drilldown Characteristic)

General | Display | Hierarchy

Description
Personnel Area

☒ Use Standard Text

Technical Name
OPERS_AREA

Change/update the Characteristic Description

Properties
Personnel Area (Drilldown Characteristic)

General | Display | Hierarchy

Value Display
Display as
Text

Text View
Standard

☒ Use Characteristic Setting

Sorting
Sort Characteristic
As in the Query

Sort by
As in the Query

Sort Direction
As in the Query

☐ Use Characteristic Setting

Results Rows
Always Display

☒ Use Characteristic Setting

Determine how or if the Characteristic is displayed

Determine how to sort the Characteristic: Ascending / Descending

Determine how or if the Results Rows are displayed

Properties
Personnel Area (Drilldown Characteristic)

General | Display | Hierarchy | Planning | Advanced

☐ Activate Hierarchy Display

Select
No Hierarchy Characteristic

Hierarchy will be explained in Hierarchy Properties

Properties
Personnel Area (Drilldown Characteristic)

General | Display | Hierarchy | Planning | Advanced

Planning on Hierarchy Nodes

- ☒ No Budgeting
- ☐ Bottom-Up Budgeting (Roll Up Value)
- ☐ Top-Down Budgeting (Posting to Higher-Level Nodes)
- ☐ Top-Down Budgeting (Posting to Root Node)

Not supported by server

Properties
Personnel Area (Drilldown Characteristic)

General | Display | Hierarchy | Planning | Advanced

UID
D3BVS6IIXW5MAB61TPN65GHE3

Access Type for Result Values

- ☒ Posted Values
- ☐ Characteristic Relationships
- ☐ Master Data

☒ Use Characteristic Setting

Filter Value Selection During Query Execution

- ☒ Only Posted Values for Navigation
- ☐ Only Values in InfoProvider
- ☐ Values in Master Data Table
- ☐ Characteristic Relationships

☒ Use Characteristic Setting

Refresh Variables

- ☒ Refresh Dynamically
- ☐ Refresh As Designed

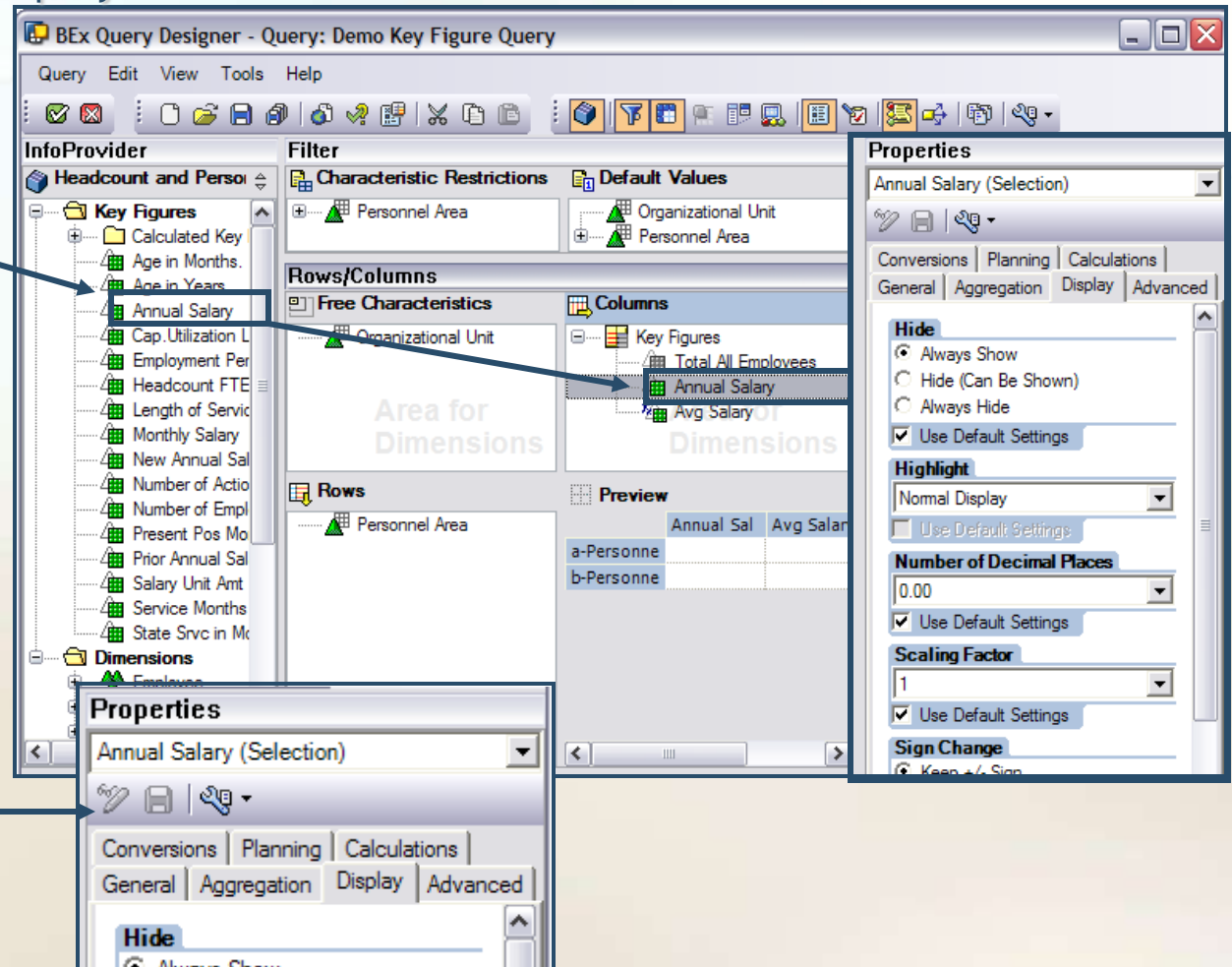
☒ Use Characteristic Setting

Key Figure Properties are settings that format the Key Figure values when they are displayed in the ad hoc query results.

The example uses the Headcount and Personnel Actions InfoProvider to show how to access the Properties of the Annual Salary Key Figure in the query.

To access the Key Figures Properties:

1. If necessary, Drag&Drop the Annual Salary Key Figure to the column section of the query.
2. Select the Annual Salary Key Figure.



Result: The Properties for the Selection/Formula for Annual Salary are displayed in the Properties pane.

The example below provides a brief description of Key Figure Properties:

The collage consists of six screenshots of the SAP Key Figure Properties dialog, each with a text box highlighting a specific feature:

- Top Left:** "Update description name" points to the Description field in the General tab.
- Top Middle:** "Key Figure Aggregation" points to the Aggregation tab.
- Top Right:** "Determine how the Key Figure will be displayed" points to the Display tab.
- Middle Left:** "Converts to a different currency." points to the Currency Translation section in the Planning tab.
- Middle Right:** "Determine how the Key Figure will be calculated" points to the Calculations tab.
- Bottom Right:** A zoomed-in view of the "Local Calculations" section in the Calculations tab, showing options like "Calculate Results As..." and "Calculate Single Values As...".

Other visible settings include:

- General Tab:** Technical Name, Use Standard Text.
- Aggregation Tab:** Exception Aggregation, Use Standard Aggregation, Ref. Characteristic.
- Display Tab:** Hide (Always Show, Hide (Can Be Shown), Always Hide), Highlight (Normal Display), Number of Decimal Places (0.00), Scaling Factor (1), Sign Change (Keep +/- Sign), Status of Node (Not Expandable).
- Planning Tab:** Change Data (Data cannot be changed, Data can be changed using planning functions, Data can be changed using user entries or planning functions), Planning on Totals, Disaggregation (No Disaggregation, Disaggregate Value Entered, Disaggregate Difference to Value Entered), Type of Distribution (Equal Distribution, Analog Distribution (Self-Reference), Analog Distribution (With Reference to Following Structure Element)).
- Calculations Tab:** Local Calculations (Calculate Results As..., Calculate Single Values As..., (Nothing Defined), Minimum, Maximum, Total, Summation of Rounded Values, Counter for All Detailed Values, Counter for All Detailed Values That A, First Value, Calculation Direction).

Variables prompt the user to enter selection criteria values prior to running the ad hoc query. For example, a Variable might be a Personnel Area, Employee Number or Date.

Variables can be selected from the “Characteristic Value Variables” section of the Characteristics.

Indicates a Variable

Indicates a Variable has been added to a Characteristic

List of Variables to choose from

Variable has been added. Prompts user for a value prior to running query

BEx Query Designer - Query: Demo Key Figure Query

Query Edit View Tools Help

InfoProvider

- Headcount and Personnel Actions
 - Key Figures
 - Dimensions
 - Employee
 - Action
 - Personnel Area
 - Duty Station County
 - Personnel Area
 - Characteristic value variables
 - Personnel Area (Optional)
 - Personnel Area (Optional)
 - Personnel Area - Select (Mandatory)
 - Personnel Area - Select (Optional)
 - Personnel Area - Select (Optional)

Filter

- Characteristic Restricti
 - Personnel Area
- Default Values
 - Organizational Unit
 - Personnel Area
 - Personnel Area - Select

Rows/Columns

- Free Characteristics
 - Organizational Unit
- Columns
 - Key Figures
 - Total All Employees
 - Annual Salary
 - Avg Salary

Area for Filter Values

Area for Dimensions

Area for Dimensions

Rows

- Personnel Area

Preview

	Annual Sal	Avg Sal
a-Personne		



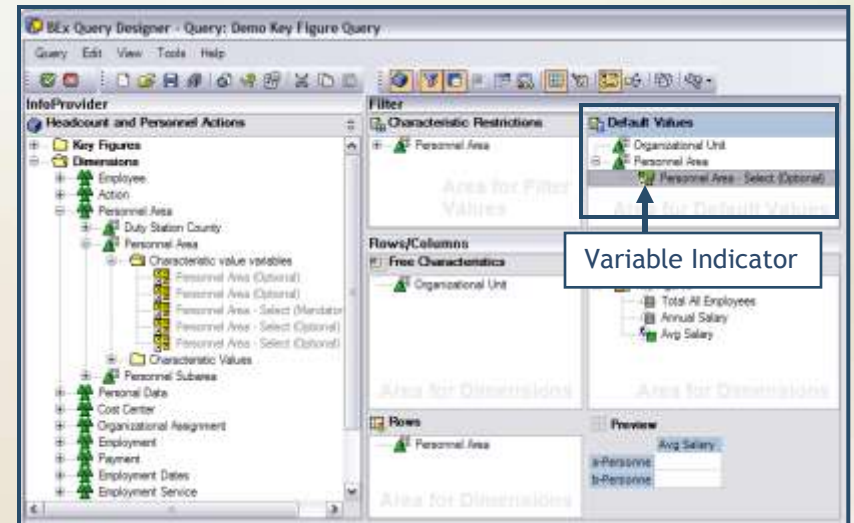
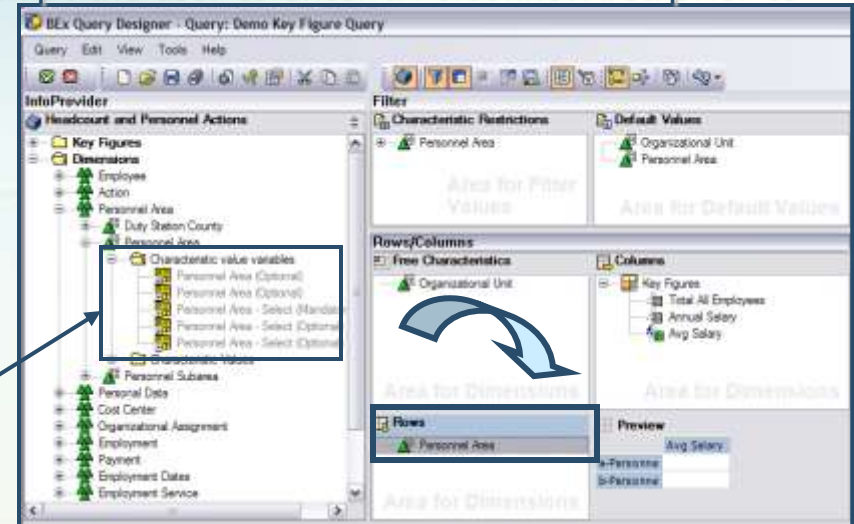
Variables can be created by BI Production Support Staff only. Variables have been created for BI by the BI Production Support Staff and are available to the BI Power Users for ad hoc queries.

Continued...

The example below uses the Headcount and Personnel Action InfoProvider to show how to add a Variable to the Personnel Area Characteristic. The Variable will prompt the user to enter a Personnel Area prior to running the query.

To add a Variable to an ad hoc query:

1. Drag&Drop the Personnel Area Characteristic to the Rows section of the ad hoc query.
2. Expand the Personnel Area Characteristic in the InfoProvider Field List.
3. Expand the Characteristic Value Variables for the Personnel Area Characteristic in the InfoProvider Field List.
4. Drag&Drop the Personnel Area (Optional) Variable located under the Characteristic Value Variables of the Characteristic on **top** of the Personnel Area Characteristic in the “Default Values” section of the query.



Continued...

Result: When the ad hoc query is executed, the user will be prompted to enter a Personnel Area.

Variable Entry

Available Variables: Save Save As... Delete [Show Variable Personalization](#)

General Variables

Variable	Current Selection	Description
Personnel Area - Select (Optional)	<input type="text"/>	

OK Check